

Specification	AXX49	Issue: 01	Date: 2005-01-15
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Oscillator type : Quartz Crystal Unit HC-49/U

Parameter	min.	typ.	max.	Unit	Condition
Frequency range	1.8		150	MHz	
Crystal cut	AT/BT				
Mode	1	1.8 ~ 48		MHz	Fundamental mode
	3	20 ~ 100		MHz	3 rd overtone
	5	60 ~ 150		MHz	5 th overtone
Load capacitance C _L	5 ~ 50 pF or Series			pF	See ordering code
Adjustment tolerance	± 5 ~ ± 50			ppm	See ordering code
Frequency stability					
Frequency stability over temperature range	± 3 ~ ± 50			ppm	See Table 1
operating temperature range (steady state)	-40		+105	°C	See Table 1
long term (aging)		± 2	± 5	ppm	per year
Resonance resistance R _{r max}				Ω	See Table 2
Motional capacitance C ₁				fF	
Static capacitance C ₀			7	pF	
Drive level	0,01	100	1000	μW	
Insulation resistance	500			MΩ	100 V DC
Storage temperature range	-45		+105	°C	
Enclosure (see drawing)	HC-49/U				IEC 60122-3 Type DP, SS-J2 (SMD)
Can height	13.5 max			mm	
Flange width	max. 4.65			mm.	
SMD configuration	Optional				See ordering code
marking	Frequency (MHz) AXX49 wwAXyy				Side 1 Date Code & MfG Code
Packing	Bulk / Tape & reel				T&R On request

Notes:

1. Terminology and test conditions are according to IEC standard IEC60122-1, unless otherwise stated
2. Measurement technique according to IEC 60444-5 or equivalent

Table 1: Frequency Stability over Temperature

	ppm	± 3	± 5	± 7	± 10	± 15	± 20	± 30	± 50
°C	Code	1	2	3	4	5	6	7	8
-10 ~ + 60	A	●	●	●	●	●	●	●	●
-20 ~ + 60	B		●	●	●	●	●	●	●
0 ~ + 70	C		●	●	●	●	●	●	●
-10 ~ + 70	D		●	●	●	●	●	●	●
-20 ~ + 70	E		●	●	●	●	●	●	●
-30 ~ + 60	F			●	●	●	●	●	●
-20 ~ + 85	G				●	●	●	●	●
-30 ~ + 70	H				●	●	●	●	●
0 ~ + 85	I				●	●	●	●	●
-40 ~ + 85	J					●	●	●	●
-40 ~ + 90	K						●	●	●
-40 ~ + 105	L							●	●

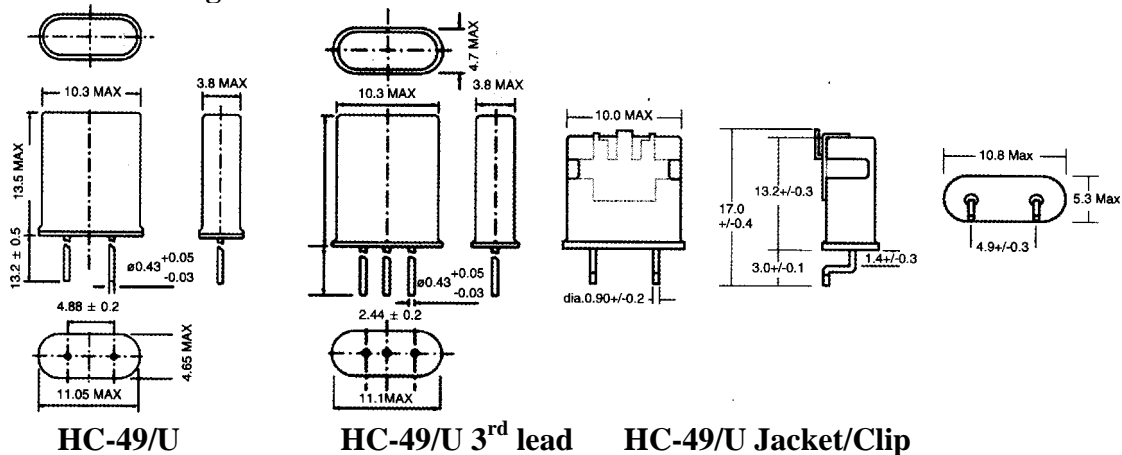
Table 2: Resistance R_r

Frequency [MHz]	Mode	R _{rmax} [Ω]
1.8 ~ 2.999	1	400
3.0 ~ 4.999	1	90
5.0 ~ 9.999	1	40
10 ~ 48	1	25
20 ~ 100	3 rd	40
60 ~ 150	5 th	80

Ordering Code:

Type	Frequency	Load capacitance	Mode	Adjustment Tolerance	Freq. stability over temperature	Package Option	Packing
	[MHz]	SR: Series 18: 18 pF	1: Fund 3, 5: OT	[±ppm]	Code :Table 1	J: Jacket/Clip 3: 3 rd lead	B: Bulk T&R: Tape& Reel
AXX49	4.000	18	1	10	A3	J	T&R

Enclosure drawings



HC-49/U

HC-49/U 3rd lead

HC-49/U Jacket/Clip

Environmental conditions

Test	IEC 60068 Part ...	IEC 61178-1 clause ...	Test conditions
Visual inspection, dimensions		4.5 4.6	Enclosure styles as in IEC 60122-3, if applicable
Sealing tests	2-17	4.8.2	Gross leak: Test Qc, Fine leak: Test Qk
Solderability Resistance to soldering heat	2-20	4.8.3	Test Ta (235 ± 5)°C Method 1 Test Tb Method 1A, 5s
Shock	2-27	4.8.8	Test Ea, 3 x per axes 100g, 6 ms half-sine pulse
Bump	2-29	4.8.6	Test Eb, 4000 bumps per Axes, 40g, 6 ms
Free fall	2-32	4.8.9	Test Ed procedure 1, 2 drops from 1m height
Vibration, sinusoidal	2-6	4.8.7	Test Fc, 30 min per axes, 10 Hz - 55 Hz 0,75mm; 55 Hz - 1 kHz, 10g
Rapid change of temperature	2-14	4.8.5	Test Na, 10 cycles at extremes of operating temperature range
Dry heat	2-2	4.8.11	Test Ba, 16 h at upper temperature indicated by climatic category
Damp heat, cyclic	2-30	4.8.12	Test Db variant 1 severity b), 55°C/95% r.H., 6 cycles
Cold	2-1	4.8.13	Test Aa, 2 h at lower temperature indicated by climatic category
Climatic sequence	1-7	4.8.14	Sequence of 4.8.11, 4.8.12 (1 st cycle), 4.8.13, 4.8.12 (5 cycles)
Damp heat, steady state	2-3	4.8.15	Test Ca, 56 days
Endurance tests - ageing - extended aging		4.9.1 4.9.2	30 days @ 85°C 1000h, 2000h, 8000h @ 85°C